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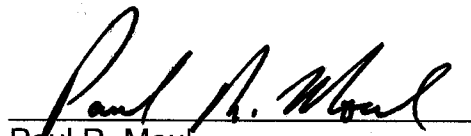   )   **<u>VERIFICATION</u>**
)

COUNTY OF CAMDEN)

PERSONALLY appeared before me, Paul R. Moul, who being duly sworn states: That

he is the Managing Consultant of P. Moul & Associates; that the testimony attached

hereto as Testimony of Paul R. Moul is based upon information that he believes to be

true and correct.

Paul A. Moul

Paul R. Moul

Sworn to before me this
12th day of January, 2007

Ruby Marie Tucker

Ruby Marie Tucker

My Commission Expires:

Notary Public of New Jersey
I.D.#2165661 Com.Exp. 5/12/09
Ruby Marie Tucker

BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

LOCKHART POWER COMPANY

Docket No. 2007-33-E

Direct Testimony

of

Paul R. Moul, Managing Consultant
P. Moul & Associates

Concerning

Cost of Equity

Lockhart Power Company
Direct Testimony of Paul R. Moul
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1   **INTRODUCTION AND SUMMARY OF RECOMMENDATIONS**

2   Q.   **Please state your name, business address, and occupation.**

3   A.   My name is Paul Ronald Moul. My business address is 251 Hopkins Road, Haddonfield,

4   NJ 08033-3062. I am Managing Consultant of the firm P. Moul & Associates, an

5   independent, financial, and regulatory consulting firm. My educational background,

6   business experience, and qualifications are provided in Appendix A that follows my direct

7   testimony.

8   Q.   **What is the purpose of your testimony?**

9   A.   My testimony presents evidence, analysis, and a recommendation concerning the

10   appropriate rate of return on common equity that the Public Service Commission of South

11   Carolina ("PSC" or the "Commission") should allow Lockhart Power Company

12   ("Lockhart" or the "Company") an opportunity to earn on its electric jurisdictional rate

13   base devoted to public service. My analysis and recommendation is supported by the

14   detailed financial data contained in Exhibit No. PRM-1, which is a multi-page document

15   divided into eleven (11) schedules. Additional evidence, in the form of appendices,

16   follows my direct testimony. The items covered in these appendices provide additional

17   detailed information concerning the explanation and application of the various financial

18   models upon which I rely.

19   Q.   **Based upon your analysis, what is your conclusion concerning the appropriate rate of**

20   **return on common equity for the Company in this case?**

21   A.   My conclusion is that the Company should be afforded an opportunity to earn a rate of

22   return on common equity of 12.00% prior to the performance-based adjustment. When

1   applied to the Company's rate base, this rate of return will compensate investors for the

2   use of their capital.

3 Q. **How have you determined the rate of return on common equity in this case?**

4 A. In arriving at my recommended rate of return on common equity, I employed capital

5   market and financial data relied upon by investors to assess the relative risk, and hence the

6   cost of equity, for an electric utility, such as the Company. In this regard, I relied on four

7   well-recognized measures of the cost of equity: the Discounted Cash Flow ("DCF")

8   model, the Risk Premium analysis, the Capital Asset Pricing Model ("CAPM"), and the

9   Comparable Earnings approach. By considering the results of a variety of approaches, I

10   determined that a reasonable rate of return on common equity should be 12.00% for the

11   Company prior to the performance-based adjustment. The testimony of Mr. Bryan D.

12   Stone explains the justification for the performance-based adjustment that the Company is

13   proposing in this case.

14   The rate of return on common equity that I propose is consistent with well-

15   recognized principles for determining a fair rate of return. In this regard, the Commission

16   should consider the principles that I have set forth in Appendix B. The end result of the

17   Commission's rate of return allowance must provide the Company with an opportunity to

18   cover dividend payments, provide a reasonable level of earnings retention, produce an

19   adequate level of internally generated funds to meet capital requirements, and be

20   commensurate with the risk to which the Company's capital is exposed.

21 Q. **What factors have you considered in determining the cost of equity in this case?**

22 A. The models that I used to measure the rate of return on common equity for the Company

1   were applied with market and financial data developed from a proxy group of eight

2   companies that own electric utilities.   The proxy group consists of publicly-traded

3   companies that are included in The Value Line Investment Survey, whose electric utility

4   subsidiaries operate in the southeastern region of the U.S., and are not currently the target

5   of a merger or acquisition. The companies in the proxy group are identified on page 2 of

6   Schedule 2. I will refer to these companies as the "Electric Group" throughout my

7   testimony.

8   Q.   **How have you performed your cost of equity analysis with the market data for the**

9   **Electric Group?**

10   A.   I have applied the models/methods for estimating the cost of equity using the average data

11   for the Electric Group. I have not separately measured the cost of equity for the individual

12   companies within the Electric Group, because the determination of the cost of equity for

13   an individual company has become increasingly problematic. By employing group

14   average data, rather than individual company analysis, I have helped to minimize the

15   effect of extraneous influences on the market data for an individual company.

16   Q.   **Please summarize your cost of equity analysis for the Electric Group.**

17   A.   My cost of equity determination was derived from the results of the methods/models

18   identified above. In general, the use of more than one method provides a superior

19   foundation to arrive at the cost of equity. The following tabulation provides a summary of

20   the indicated costs of equity using each of these approaches.

DCF	10.85%
Risk Premium	11.46%
CAPM	11.47%
Comparable Earnings	14.30%
Average	12.02%
Median	11.47%
Mid-point	12.58%

1   From all these measures, the rate of return on common equity developed from the Electric

2   Group is 12.02%, which is the average of all of these methods. To accommodate the

3   unique risk characteristics of Lockhart, I adjusted the results of the Electric Group. The

4   two adjustments that I propose were intended to recognize the small size of Lockhart as

5   compared to the Electric Group and the lack of debt in the Company's capital structure. I

6   determined that the Company's allowed rate of return on common equity should be

7   12.00% prior to the performance-based adjustment.

8   **ELECTRIC UTILITY RISK FACTORS**

9   Q. **What background information have you considered in analyzing the Company's rate**

10   **of return on common equity?**

11 A. Lockhart is a very small electric utility. It is a wholly-owned subsidiary of Milliken &

12   Company, Inc. In the year 2005, the Company had just 6,310 customers and had only 39

13   employees. The Company has realized a net gain of only 113 customers since 2001,

14   including the loss of one industrial customer. I know of no other investor-owned electric

15   utility that is this small. In 2005, the Company generated approximately 23% of its energy

16   from a run-of-the-river hydroelectric facility and purchased 77% of its electric

4

1   requirements from Duke Energy. Also, in 2005, the Company's direct sales (excluding

2   sales for resale) were represented by approximately 33% to residential, 9% to commercial,

3   and 58% to industrial customers. While representing 58% of direct electric sales, there are

4   only ten (10) industrial customers. This means that the energy needs of a few customers

5   have a significant impact on the Company's operations. The Company also has one sale

6   for resale customer that represents approximately 40% of total megawatt hour sales. In the

7   aggregate, the ten industrial customers and one wholesale customer represent 74% of total

8   megawatt hour requirements.

9 Q. **Please discuss the evolving risk issues for electric utilities.**

10 A. The recent passage of the Energy Policy Act of 2005 highlights the emphasis being placed

11   upon the reliability and structure of the electric utility industry. Aside from their

12   traditional responsibility to supply adequate capacity to meet forecast loads (in a more

13   uncertain market), and to comply with increasingly stringent environmental standards,

14   increasing competitive risks are now evolving in a new era for electric utilities. Some

15   electric utilities face substantial increases in operating and capital costs to comply with the

16   Clean Air Act ("CAA"). Through 2005, 100% of its generation was renewable hydro-

17   electric energy, and as a consequence, the Company did not face any environmental risk

18   directly. Environmental compliance costs, however, could potentially impact its cost of

19   purchased power. While the cost of purchased power is recovered by the Company

20   through a tracking mechanism, higher purchased power costs make the Company's electric

21   rates less competitive. In addition, globalization facing its large industrial customers has a

22   significant impact on the Company's sales to these customers.

1   **Q.**   **Are there other specific risk issues facing the Company?**

2   A.   Yes. Its risk profile is strongly influenced by electricity sold to industrial customers and

3   sales for resale. Sales to industrial and sales for resale customers, represent approximately

4   74% of total sales by the Company. In the industrial class of customers, the Company's

5   business profile is dominated by textile and textile related industries. Sales to high volume

6   customers are usually thought to be of higher risk than sales to other classes of customers.

7   Success in this segment of the Company's market is subject to (i) the business cycle, (ii)

8   the price of alternative energy sources, and (iii) pressures from alternative providers. In

9   the textile industry, foreign competition has dimmed the outlook for this industry.

10   Moreover, external factors can also influence the Company's sales to these customers

11   which face competitive pressures on their own operations from other facilities outside the

12   Company's service territory. The risk associated with serving industrial customers

13   engaged in the textile and textile related industries can also have a ripple effect on other

14   classes of customers. That is to say, sales to residential and commercial customers can

15   also be impacted by plant closures that may occur.

16   **Q.**   **Please indicate how the Company's risk profile is affected by its construction**

17   **program.**

18   A.   Lockhart is faced with the requirement to undertake investment to maintain and upgrade

19   existing facilities in its service territory and to maintain system reliability. Over the 2006-

20   2010 period, Lockhart's capital expenditures are expected to represent approximately 50%

21   of its net utility plant. In order to fund these substantial capital expenditures, the

22   Company's parent (Milliken & Company, Inc.) has elected to forego any dividends in the

1   year 2006, and potentially beyond.

2 Q. **Please summarize your risk assessment of Lockhart?**

3 A. Lockhart's business risk profile is dominated by:

- Its very small size.
- Low growth in its service territory
- Limited diversity in its service territory
- A service area whose economy is highly dependent upon the textile and textile related industries.
- Heavy reliance upon purchased power to meet the energy requirements of its customers.
- Its large capital expenditures.

12   Based upon these factors, the Company's business risk is high. To help mitigate these

13   business risk factors, the Company's financial profile consists of 100% equity.

FUNDAMENTAL RISK ANALYSIS

15 Q. **Is it necessary to conduct a fundamental risk analysis to provide a framework for a**

16   **determination of a utility's cost of equity?**

17 A. Yes. It is necessary to establish a company's relative risk position within its industry

18   through a fundamental analysis of various quantitative and qualitative factors that bear

19   upon investors' assessment of overall risk. The qualitative factors which bear upon the

20   Company's risk have already been discussed. The quantitative risk analysis follows. The

21   items that influence investors' evaluation of risk and its required returns are described in

22   Appendix C. For this purpose, I have utilized the S&P Public Utilities, an industry-wide

23   proxy consisting of various regulated businesses, and the Electric Group.

24 Q. **What are the components of the S&P public utilities?**

25 A. The S&P Public Utilities is a widely recognized index that is comprised of electric power

26   and natural gas companies. These companies are identified on page 3 of Schedule 3. I

1   have used this group as a broad-based measure of all types of utility companies.

2   Q. **What criteria did you employ to assemble the Electric Group?**

3   A. The Electric Group that I employed in this case includes eight companies that are engaged

4   in similar business lines, have publicly-traded common stock, are reported in <u>The Value</u>

5   <u>Line Investment Survey</u>, operate within the southeastern region of region of the U.S., and

6   are not currently the target of a merger or acquisition. The Electric Group includes

7   Dominion Resources, Inc., Duke Energy Corp., Entergy Corp., FPL Group, Progress

8   Energy, SCANA Corp., Southern Company, and TECO Energy. The Electric Group

9   members are identified on page 2 of Schedule 2.

10 Q. **Is knowledge of a utility's bond rating an important factor in assessing its risk and**

11   **cost of capital?**

12 A. Yes. Knowledge of a company's credit quality rating is important because the cost of each

13   type of capital is directly related to the associated risk of the firm. So while a company's

14   credit quality risk is shown directly by the credit rating and yield on its bonds, these

15   relative risk assessments also bear upon the cost of equity. This is because a firm's cost of

16   equity is represented by its borrowing cost plus compensation to recognize the higher risk

17   of an equity investment compared to debt.

18 Q. **How do the bond ratings compare for the Electric Group and the S&P Public**

19   **Utilities?**

20 A. Presently, the corporate credit rating ("CCR") for the Electric Group is a BBB+ from

21   Standard and Poor's Corporation ("S&P") and the Long Term ("LT") issuer rating is A3

22   from Moody's Investors Services ("Moody's"). The CCR designation by S&P and LT

1   issuer rating by Moody's focuses upon the credit quality of the issuer of the debt, rather

2   than upon the debt obligation itself. For the S&P Public Utilities, the average composite

3   rating is BBB+ by S&P and Baa1 by Moody's. Many of the financial indicators that I will

4   subsequently discuss are considered during the rating process.

5 **Q.** **How do the financial data compare for Lockhart, the Electric Group, and the S&P**

6   **Public Utilities?**

7 **A.** The broad categories of financial data that I will discuss are shown on Schedules 1, 2 and

8   3. The data cover the five-year period 2001-2005. For the purpose of my analysis, I have

9   analyzed the historical results for Lockhart, the Electric Group, and the S&P Public

10   Utilities. I will highlight the important categories of relative risk as follows:

11   <u>Size</u>. In terms of capitalization, Lockhart is several orders of magnitude smaller

12   than the average size of the Electric Group and the S&P Public Utilities. Indeed the

13   Company's capitalization is about $18 million as compared to approximately $20 billion

14   for the Electric Group and approximately $15 billion for the S&P Public Utilities. All

15   other things being equal, a smaller company is riskier than a larger company because a

16   given change in revenue and expense has a proportionately greater impact on a small firm.

17   As I will demonstrate later, the size of a firm can impact its cost of equity. This is the case

18   for Lockhart. Indeed, the Company is only about one-tenth of one-percent of the average

19   size of the Electric Group. Such small size significantly elevates the Company's risk

20   profile and increases its required return.

21   <u>Market Ratios</u>. Market-based financial ratios provide a partial indication of the

22   investor-required cost of equity. If all other factors are equal, investors will require a

1   higher return on equity for companies that exhibit greater risk, in order to compensate for

2   that risk. That is to say, a firm that investors perceive to have higher risks will experience

3   a lower price per share in relation to expected earnings.[1]

4   There are no market ratios available for Lockhart. The five-year average price-

5   earnings multiple was fairly similar for the Electric Group and the S&P Public Utilities.

6   The five-year average dividend yield was higher for the Electric Group, as compared to

7   the S&P Public Utilities. The five-year average market-to-book ratio was fairly similar for

8   the Electric Group and the S&P Public Utilities.

9   Common Equity Ratio. The level of financial risk is measured by the proportion of

10   long-term debt and other senior capital that is contained in a company's capitalization.

11   Financial risk is also analyzed by comparing common equity ratios (the complement of the

12   ratio of debt and other senior capital). That is to say, a firm with a high common equity

13   ratio has lower financial risk, while a firm with a low common equity ratio has higher

14   financial risk. Lockhart employs no borrowed capital in its capitalization, and hence has

15   no financial risk. The five-year average common equity ratios, based on permanent

16   capital, were 41.8% for the Electric Group and 39.5% for the S&P Public Utilities.

17   Return on Book Equity. Greater variability (i.e., uncertainty) of a firm's earned

18   returns signifies relative levels of risk, as shown by the coefficient of variation (standard

19   deviation ÷ mean) of the rate of return on book common equity. The higher the

20   coefficients of variation, the greater degree of variability. For the five-year period, the

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[1]   For example, two otherwise similarly situated firms each reporting $1.00 in earnings per share would have different market prices at varying levels of risk (i.e., the firm with a higher level of risk will have a lower share value, while the firm with a lower risk profile will have a higher share value).

1   coefficients of variation were 0.114 (1.2% ÷ 10.5%) for Lockhart, 0.297 (3.0% ÷ 10.1%)

2   for the Electric Group, and 0.231 (2.5% ÷ 10.8%) for the S&P Public Utilities. The

3   relative earnings variability is less for Lockhart than for the Electric Group. This situation

4   is explained by the lack of borrowed funds in the Company's capital structure. Typically,

5   the use of borrowed funds magnifies the variability of pre-tax returns. Since it employs no

6   financial leverage, lower earnings variability would be expected for Lockhart.

7   Operating Ratios. I have also compared operating ratios (the percentage of

8   revenues consumed by operating expense, depreciation, and taxes other than income).[2]

9   The five-year average operating ratios were 85.7% for Lockhart, 83.7% for the Electric

10   Group, and 84.6% for the S&P Public Utilities. These comparisons show higher operating

11   risk for Lockhart as compared to the Electric Group and the S&P Public Utilities.

12   Lockhart's higher operating ratio can be traced to the significant role that purchased power

13   has on its operations. With a majority of its energy requirements provided by another

14   utility, the Company must rely upon Duke to provide much of the energy needs of its

15   customers. In the hierarchy of claims on the Company's revenues, Duke (i.e., the

16   wholesaler) obtains recovery of its fixed costs prior to the realization of a return for

17   Lockhart (i.e., the retailer). Hence, the investor in the retail business is subordinate to the

18   contractual payments to the wholesaler. That is to say, the fixed costs of the wholesaler

19   become operating costs of the retailer.

20   Coverage. The level of fixed charge coverage (i.e., the multiple by which available

21   earnings cover fixed charges, such as interest expense) provides an indication of the

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[2]   The complement of the operating ratio is the operating margin which provides a measure of profitability.
The higher the operating ratio, the lower the operating margin.

1 earnings protection for creditors. Higher levels of coverage, and hence earnings protection

2 for fixed charges, are usually associated with superior grades of creditworthiness. The

3 five-year average interest coverage (excluding AFUDC) was 2.73 times for the Electric

4 Group, and 2.68 times for the S&P Public Utilities. Coverage calculations are not

5 meaningful for Lockhart because interest on customer deposits represents its only interest

6 expense.

7   <u>Quality of Earnings</u>. Measures of earnings quality usually are revealed by the

8 percentage of Allowance for Funds Used During Construction ("AFUDC") related to

9 income available for common equity, the effective income tax rate, and other cost

10 deferrals. These measures of earnings quality usually influence a firm's internally

11 generated funds because poor quality of earnings would not generate high levels of cash

12 flow. Quality of earnings has not been a significant concern for Lockhart, the Electric

13 Group, and the S&P Public Utilities.

14   <u>Internally Generated Funds</u>. Internally generated funds ("IGF") provide an

15 important source of new investment capital for a utility and represent a key measure of

16 credit strength. Historically, the five-year average percentage of IGF to capital

17 expenditures was 116.7% for Lockhart, 99.1% for the Electric Group, and 109.0% for the

18 S&P Public Utilities. The Company has the ability to manage its dividend payments so as

19 to internally fund its construction requirements. Hence, during periods of high capital

20 requirements, the Company may pay little or no dividends. The ability to manage

21 dividend payments in response to capital expenditures is a situation not common for larger

22 electric utilities with publicly-traded stock.

1   <u>Betas</u>. The financial data that I have been discussing relate primarily to company-

2   specific risks. Market risk for firms with publicly-traded stock is measured by beta

3   coefficients. Beta coefficients attempt to identify systematic risk, i.e., the risk associated

4   with changes in the overall market for common equities.[3] Value Line publishes such a

5   statistical measure of a stock's relative historical volatility to the rest of the market. A

6   comparison of market risk is shown by the Value Line betas provided on page 2 of

7   Schedule 2 -- .91 as the average for the Electric Group, and page 3 of Schedule 3 -- .95 as

8   the average for the S&P Public Utilities. Keeping in mind that the utility industry has

9   changed dramatically during the past five years, the systematic risk percentage is 96% (.91

10   ÷ .95) for the Electric Group using S&P Public Utilities' average beta as a benchmark.

11 **Q.   Please summarize your risk evaluation of Lockhart and the Electric Group.**

12 A.   Lockhart is several orders of magnitude smaller than the average size of the Electric

13   Group. The Company also possesses higher operating risk than the Electric Group. As a

14   mitigating risk factor, Lockhart lacks any financial risk because its common equity ratio is

15   100%. The Company's retail customer base is dominated by a large proportion of sales to

16   few industrial customers, many of which are engaged in textile manufacturing and related

17   industries. The Company's capital expenditures are also expected to be relatively large in

18   the future. Overall, the fundamental risk factors indicate that the Electric Group is useful

19   in measuring the Company's cost of equity, when Lockhart's unique risk traits are taken

20   into account.

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[3]   The procedure used to calculate the beta coefficient published by Value Line is described in Appendix I.
A common stock that has a beta less than 1.0 is considered to have less systematic risk than the market as a whole
and would be expected to rise and fall more slowly than the rest of the market. A stock with a beta above 1.0
would have more systematic risk.

13

1   <u>**COST OF EQUITY – GENERAL APPROACH**</u>

2 Q. **Please describe the process you employed to determine the cost of equity for the**

3   **Company.**

4 A. Although my fundamental financial analysis provides the required framework to establish

5   the risk relationships between Lockhart, the Electric Group, and the S&P Public Utilities,

6   the cost of equity must be measured by standard financial models that I describe in

7   Appendix D. Differences in risk traits, such as size, business diversification, geographical

8   diversity, regulatory policy, financial leverage, and bond ratings must be considered when

9   analyzing the cost of equity.

10   It is also important to reiterate that no one method or model of the cost of equity

11   can be applied in an isolated manner. Rather, informed judgment must be used to take into

12   consideration the relative risk traits of the firm. It is for this reason that I have used more

13   than one method to measure the Company's cost of equity. As noted in Appendix D, and

14   elsewhere in my direct testimony, each of the methods used to measure the cost of equity

15   contains certain incomplete and/or overly restrictive assumptions and constraints that are

16   not optimal. Therefore, I favor considering the results from a variety of methods. In this

17   regard, I applied each of the methods with data taken from the Electric Group and have

18   arrived at a cost of equity of 12.02%. With this cost of equity as a foundation, I

19   determined that a 12.00% rate of return on common equity prior to the performance-based

20   adjustment is appropriate for Lockhart, after recognizing the Company's 100% common

21   equity ratio and its very small size.

1   DISCOUNTED CASH FLOW ANALYSIS

2   Q. Please describe your use of the Discounted Cash Flow approach to determine the cost

3   of equity.

4   A. The details of my use of the DCF approach and the calculations and evidence in support of

5   my conclusions are set forth in Appendix E. I will summarize them here. The Discounted

6   Cash Flow ("DCF") model seeks to explain the value of an asset as the present value of

7   future expected cash flows discounted at the appropriate risk-adjusted rate of return. In its

8   simplest form, the DCF return on common stocks consists of a current cash (dividend)

9   yield and future price appreciation (growth) of the investment.

10   Among other limitations of the model, there is a certain element of circularity in

11   the DCF method when applied in rate cases. This is because investors' expectations for

12   the future depend upon regulatory decisions. In turn, when regulators depend upon the

13   DCF model to set the cost of equity, they rely upon investor expectations that include an

14   assessment of how regulators will decide rate cases. Due to this circularity, the DCF

15   model may not fully reflect the true risk of a regulated utility.

16   As I describe in Appendix E, the DCF approach has other limitations that diminish

17   its usefulness in the ratesetting process when the market capitalization of utilities with

18   traded stock diverges significantly from the book value capitalization. When this situation

19   exists, the DCF method will lead to a misspecified cost of equity when it is applied to a

20   book value capital structure.

21 Q. Please explain the dividend yield component of a DCF analysis.

22 A. The DCF methodology requires the use of an expected dividend yield to establish the

                                            15

1   investor-required cost of equity. For the twelve months ended September 2006, the

2   monthly dividend yields of the Electric Group are shown graphically on Schedule 4. The

3   monthly dividend yields shown on Schedule 4 reflect an adjustment to the month-end

4   prices to reflect the build up of the dividend in the price that has occurred since the last ex-

5   dividend date (i.e., the date by which a shareholder must own the shares to be entitled to

6   the dividend payment – usually about two to three weeks prior to the actual payment). An

7   explanation of this adjustment is provided in Appendix E.

8   For the twelve months ending September 2006, the average dividend yield was

9   4.20% for the Electric Group based upon a calculation using annualized dividend

10   payments and adjusted month-end stock prices. The dividend yields for the more recent

11   six- and three- month periods were 4.25% and 4.14%, respectively. I have used, for the

12   purpose of my direct testimony, a dividend yield of 4.25% for the Electric Group, which

13   represents the six-month average yield. The use of this dividend yield will reflect current

14   capital costs while avoiding spot yields.

15   For the purpose of a DCF calculation, the average dividend yields must be adjusted

16   to reflect the prospective nature of the dividend payments i.e., the higher expected

17   dividends for the future. Recall that the DCF is an expectational model that must reflect

18   investor anticipated cash flows for the Electric Group. I have adjusted the six-month

19   average dividend yield in three different but generally accepted manners, and used the

20   average of the three adjusted values as calculated in Appendix E. That adjusted dividend

21   yield is 4.39% for the Electric Group.

22   Q. **Please explain the underlying factors that influence investor's growth expectations.**

1   A.   As noted previously, investors are interested principally in the future growth of its

2   investment (i.e., the price per share of the stock). As I explain in Appendix E, future

3   earnings per share growth represents its primary focus because under the constant price-

4   earnings multiple assumption of the DCF model, the price per share of stock will grow at

5   the same rate as earnings per share. In conducting a growth rate analysis, a wide variety of

6   variables can be considered when reaching a consensus of prospective growth. The

7   variables that can be considered include: earnings, dividends, book value, and cash flow

8   stated on a per share basis. Historical values for these variables can be considered, as well

9   as analysts' forecasts that are widely available to investors. A fundamental growth rate

10   analysis can also be formulated, which consists of internal growth ("b x r"), where "r"

11   represents the expected rate of return on common equity and "b" is the retention rate that

12   consists of the fraction of earnings that are not paid out as dividends. The internal growth

13   rate can be modified to account for sales of new common stock -- this is called external

14   growth ("s x v"), where "s" represents the new common shares expected to be issued by a

15   firm and "v" represents the value that accrues to existing shareholders from selling stock at

16   a price different from book value. Fundamental growth, which combines internal and

17   external growth, provides an explanation of the factors that cause book value per share to

18   grow over time. Hence, a fundamental growth rate analysis is duplicative of expected

19   book value per share growth.

20   Growth can also be expressed in multiple stages. This expression of growth

21   consists of an initial "growth" stage where a firm enjoys rapidly expanding markets, high

22   profit margins, and abnormally high growth in earnings per share. Thereafter, a firm

1   enters a "transition" stage where fewer technological advances and increased product

2   saturation begins to reduce the growth rate and profit margins come under pressure.

3   During the "transition" phase, investment opportunities begin to mature, capital

4   requirements decline, and a firm begins to pay out a larger percentage of earnings to

5   shareholders. Finally, the mature or "steady-state" stage is reached when a firm's earnings

6   growth, payout ratio, and return on equity stabilizes at levels where they remain for the life

7   of a firm. The three stages of growth assume a step-down of high initial growth to lower

8   sustainable growth. Even if these three stages of growth can be envisioned for a firm, the

9   third "steady-state" growth stage, which is assumed to remain fixed in perpetuity,

10   represents an unrealistic expectation because the three stages of growth can be repeated.

11   That is to say, the stages can be repeated where growth for a firm ramps-up and ramps-

12   down in cycles over time.

13   Q.   **What investor-expected growth rate is appropriate in a DCF calculation?**

14   A.   Investors consider both company-specific variables and overall market sentiment (i.e.,

15   level of inflation rates, interest rates, economic conditions, etc.) when balancing its capital

16   gains expectations with its dividend yield requirements. I follow an approach that is not

17   rigidly formatted because investors are not influenced by a single set of company-specific

18   variables weighted in a formulaic manner. Therefore, in my opinion, all relevant growth

19   rate indicators using a variety of techniques must be evaluated when formulating a

20   judgment of investor expected growth.

21   Q.   **Before presenting your analysis of the growth rates that apply specifically to the**

22   **Electric Group, can you provide an overview of the macroeconomic factors that**

18

1   **influence investor growth expectations for common stocks?**

2   A.   Yes. As a preliminary matter, it is useful to view macroeconomic forecasts that influence

3   stock prices. Forecast growth of the Gross Domestic Product ("GDP") can represent the

4   starting point for this analysis. The GDP has both "product side" and "income side"

5   components. The product side of the GDP is comprised of: (i) personal consumption

6   expenditures; (ii) gross private domestic investment; (iii) net exports of goods and

7   services; and (iv) government consumption expenditures and gross investment. On the

8   income side of the GDP, the components are: (i) compensation of employees; (ii)

9   proprietors' income; (iii) rental income; (iv) corporate profits; (v) net interest; (vi) business

10   transfer payments; (vii) indirect business taxes; (viii) consumption of fixed capital; (ix) net

11   receipts/payment to the rest of the world; and (x) statistical discrepancy. The "product

12   side," (i.e., demand components) could be used as a long-term representation of revenue

13   growth for public utilities. However, it is well known that revenue growth does not

14   necessarily equal earnings growth. There is no basis to assume that the same growth rate

15   would apply to revenues and all components of the cost of service, especially after the

16   troublesome issues of employees' costs, insurance costs, high fuel costs, and

17   environmental costs are worked-out in the long-term for public utilities. The earnings

18   growth rates for utilities will be substantially affected by fluctuations in operating

19   expenses and capital costs.

20   The long-term consensus forecast that is published semi-annually by the Blue Chip

21   Economic Indicators ("Blue Chip") should be used as the source of macroeconomic

22   growth. Blue Chip is a monthly publication that provides forecasts incorporating a wide

1   variety of economic variables assembled from a panel of more than 50 noted economists

2   from the banking, investment, industrial, and consulting sectors whose advice affects the

3   investment activities of market participants. It is always preferable to use a consensus

4   forecast taken from a large panel of contributors, rather than to rely upon one source that

5   may not be representative of the types of information that have an impact on investor

6   expectations. Indeed, Blue Chip is frequently quoted in The Wall Street Journal, The New

7   York Times, Fortune, Forbes, and Business Week. Twice annually, Blue Chip provides

8   long-range consensus forecasts. Based upon the October 10, 2006 issue of Blue Chip,

9   those forecasts are:

Blue Chip Economic Indicators

Year	Nominal GDP	Corporate Profits, Pretax
2008	5.2%	5.5%
2009	5.3%	5.3%
2010	5.1%	5.5%
2011	5.1%	5.1%
2012	5.1%	5.7%
Averages		
2007-11	5.2%	5.4%
2012-16	5.1%	5.8%

10   These forecasts show that the rate of growth in corporate profits will decelerate during the

11   early part of the forecast period due to the run-up in interest rates that I will discuss later in

12   my testimony. Subsequently, growth will accelerate later in the period. It is also indicated

13   historically that the percentage change in corporate profits has been higher than the

14   percentage change in GDP.[4]

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[4]   Obviously, growth in corporate profits are negatively impacted during recessionary periods, but on average corporate profits have grown historically over two percentage points faster than GDP since the 1934.

1   Q.   What company-specific data have you considered in your growth rate analysis?

2   A.   I have considered the growth in the financial variables shown on Schedules 5 and 6. The

3   bar graph provided on Schedule 5 shows the historical growth rates in earnings per share,

4   dividends per share, book value per share, and cash flow per share for the Electric Group.

5   The historical growth rates were taken from the Value Line publication that provides these

6   data. As shown on Schedule 5, historical growth has been very low for many of these

7   variables for the Electric Group. This is because the historical growth rates contain

8   instances of negative values for individual companies within the Electric Group. Negative

9   growth rates provide no reliable guide to gauge investor expected growth for the future.

10   Investor expectations encompass long-term positive growth rates and, as such, could not

11   be represented by sustainable negative rates of change. Therefore, statistics that include

12   negative growth rates should not be given any weight when formulating a composite

13   growth rate expectation. The prospect of rate increases granted by regulators, the

14   continued obligation to provide service as required by customers, and the ongoing growth

15   of customers mandate investor expectations of positive future growth rates. Stated simply,

16   there is no reason for investors to expect that a utility will wind up its business and

17   distribute its common equity capital to shareholders, which would be symptomatic of a

18   long-term permanent earnings decline. Although investors have knowledge that negative

19   growth and losses can occur, their expectations include positive growth. Negative historic

20   values will not provide a reasonable representation of future growth expectations because,

21   in the long run, investors will always expect positive growth. Indeed, rational investors

22   expect positive returns, otherwise they will hold cash rather than invest with the

1 expectation of a loss.

2 Schedule 6 provides projected earnings per share growth rates taken from analysts'

3 forecasts compiled by IBES/First Call, Zacks, and Reuters/Market Guide and from the

4 Value Line publication. IBES/First Call, Zacks, and Reuters/Market Guide represent

5 reliable authorities of projected growth upon which investors rely. The IBES/First Call,

6 Zacks, and Reuters/Market Guide forecasts are limited to earnings per share growth, while

7 Value Line makes projections of other financial variables. The Value Line forecasts of

8 dividends per share, book value per share, and cash flow per share have also been included

9 on Schedule 6 for the Electric Group.

10 Although five-year forecasts usually receive the most attention in the growth

11 analysis for DCF purposes, present market performance has been strongly influenced by

12 short-term earnings forecasts. Each of the major publications provides earnings forecasts

13 for the current and subsequent year. These short-term earnings forecasts receive

14 prominent coverage, and indeed they dominate these publications. While the DCF model

15 typically focuses upon long-run estimates of earnings, stock prices are clearly influenced

16 by current and near-term earnings forecasts.

17 Q. **Is a five-year investment horizon associated with the analysts' forecasts consistent**

18 **with the DCF model?**

19 A. Yes. In fact, it illustrates that the infinite form of the model contains an unrealistic

20 assumption. Rather than viewing the DCF in the context of an endless stream of growing

21 dividends (e.g., a century of cash flows), the growth in the share value (i.e., capital

22 appreciation, or capital gains yield) is most relevant to investors' total return expectations.

1   Hence, the sale price of a stock can be viewed as a liquidating dividend that can be

2   discounted along with the annual dividend receipts during the investment-holding period

3   to arrive at the investor expected return. The growth in the price per share will equal the

4   growth in earnings per share absent any change in price-earnings (P-E) multiple -- a

5   necessary assumption of the DCF. As such, my company-specific growth analysis, which

6   focuses principally upon five-year forecasts of earnings per share growth, conforms with

7   the type of analysis that influences the total return expectation of investors. Moreover,

8   academic research focuses on five-year growth rates as they influence stock prices.

9   Indeed, if investors really required forecasts which extended beyond five years in order to

10   properly value common stocks, then I am sure that some investment advisory service

11   would begin publishing that information for individual stocks in order to meet the

12   demands of investors. The absence of such a publication signals that investors do not

13   require infinite forecasts in order to purchase and sell stocks in the marketplace.

14   Q.   **What specific evidence have you considered in the DCF growth analysis?**

15   A.   As to the five-year forecast growth rates, Schedule 6 indicates that the projected earnings

16   per share growth rates for the Electric Group are 6.23% by IBES/First Call, 6.23% by

17   Zacks, 6.38% by Reuters/Market Guide, and 6.07% by Value Line. The Value Line

18   projections indicate that earnings per share for the Electric Group will grow prospectively

19   at a more rapid rate (i.e., 6.07%) than the dividends per share (i.e., 3.69%), which indicates

20   a declining dividend payout ratio for the future. As indicated earlier, and in Appendix E,

21   with the constant price-earnings multiple assumption of the DCF model, growth for these

22   companies will occur at the higher earnings per share growth rate, thus producing the

23

1   capital gains yield expected by investors.

2   Q.   **What conclusion have you drawn from these data?**

3   A.   Although ideally historical and projected earnings per share and dividends per share

4   growth indicators would be used to provide an assessment of investor growth expectations

5   for a firm, the circumstances of the Electric Group mandate that the greater emphasis be

6   placed upon projected earnings per share growth. The massive restructuring of the utility

7   industry suggests that historical evidence alone does not represent a complete measure of

8   growth for these companies. Rather, projections of future earnings growth provide the

9   principal focus of investor expectations. In this regard, it is worthwhile to note that

10   Professor Myron Gordon, the foremost proponent of the DCF model in rate cases,

11   concluded that the best measure of growth in the DCF model is forecasts of earnings per

12   share growth.[5] Hence, to follow Professor Gordon's findings, projections of earnings per

13   share growth, such as those published by IBES/First Call, Zacks, Reuters/Market Guide,

14   and Value Line, represents a reasonable assessment of investor expectations.

15   It is appropriate to consider all forecasts of earnings growth rates that are available

16   to investors. In this regard, I have considered the forecasts from IBES/First Call, Zacks,

17   Reuters/Market Guide and Value Line. The IBES/First Call, Zacks, and Reuters/Market

18   Guide growth rates are consensus forecasts taken from a survey of analysts that make

19   projections of growth for these companies. The IBES/First Call, Zacks, and

20   Reuters/Market Guide estimates are obtained from the Internet and are widely available to

21   investors free-of-charge. First Call is probably quoted most frequently in the financial

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[5]   "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management, spring 1989
by Gordon, Gordon & Gould.

1   press when reporting on earnings forecasts. The Value Line forecasts are also widely

2   available to investors and can be obtained by subscription or free-of-charge at most public

3   and collegiate libraries.

4   With the repeal of the 1935 Public Utility Holding Company ("PUHC") act,

5   merger and acquisition ("M&A") activity, which already has been prevalent in the utility

6   industry, is expected to accelerate. Acquisitions are usually accomplished at premiums

7   offered to induce stockholders to sell its shares. These premiums create a ripple effect on

8   the stock prices of all utilities, just like a rising tide lifts all boats. Due to M&A activity,

9   there has been a run-up of the stock prices for some utility companies. With these

10   elevated stock prices, dividend yields fall, and without some adjustment to the growth

11   component of the DCF model, the results become unduly depressed by reference to

12   alternative investment opportunities – such as public utility bonds. There are three

13   remedies available to deal with these potentially anomalous DCF results: (i) an

14   adjustment to the DCF model to reflect the divergence of market capitalization and the

15   book value capitalization, (ii) the use of a growth component in the DCF model which is at

16   the high end of the range, and (iii) supplementing the DCF results with other measures of

17   the cost of equity.

18   The forecasts of earnings per share growth for the Electric Group as shown on

19   Schedule 6 provide a range of growth rates of 6.07% to 6.38%. To the growth rates for the

20   Electric Group, consideration must be given to long-term growth in corporate profits.

21   While the DCF growth rates cannot be established solely with a mathematical formulation,

22   it is my opinion that an investor-expected growth rate of 6.25% is within the array of

1   earnings per share growth rates shown by the analysts' forecasts. The Value Line forecast

2   of dividend per share growth is inadequate in this regard due to the forecast decline in the

3   dividend payout that I previously described. As previously indicated, the restructuring and

4   consolidation now taking place in the utility industry, will provide additional risks and

5   opportunities as the utility industry successfully adapts to the new business environment.

6   These changes in growth fundamentals will undoubtedly develop beyond the next five

7   years typically considered in the analysts' forecasts that will enhance the growth prospects

8   for the future. As such, a 6.25% growth rate will accommodate all these factors.

9 Q. **Please provide the DCF return based upon your preceding discussion of dividend**

10   **yield and growth.**

11 A. As explained previously, I have utilized a six-month average dividend yield ("D_1/P_0")

12   adjusted in a forward-looking manner for my DCF calculation. This dividend yield is used

13   in conjunction with the growth rate ("g ") previously developed. The cost of equity must

14   also include an adjustment to cover flotation costs ("flot."). The factor used to develop the

15   modification that would account for the flotation costs adjustment is provided in Schedule

16   7 and Appendix F. Therefore, a flotation costs adjustment must be applied to the DCF

17   result (i.e., "k") that provides an additional increment to the rate of return on equity (i.e.,

18   "K").

19 Q. **What DCF cost rate have you calculated?**

20 A. The resulting DCF cost rate is:

	D_1/P_0	+	g	=	k	x	$flot.$	=	K
Electric Group	4.39%	+	6.25%	=	10.64%	x	1.02	=	10.85%

26

1   As indicated by the DCF result shown above, the flotation cost adjustment adds 0.21%

2   (10.85% - 10.64%) to the rate of return on common equity for the Electric Group. In my

3   opinion, this adjustment is reasonable for reasons explained in Appendix F. The DCF

4   result shown above represents the simplified (i.e., Gordon) form of the model that contains

5   a constant growth assumption. I should reiterate, however, that the DCF indicated cost

6   rate provides an explanation of the rate of return on common stock market prices without

7   regard to the prospect of a change in the price-earnings multiple. An assumption that there

8   will be no change in the price-earnings multiple is not supported by the realities of the

9   equity market because price-earnings multiples do not remain constant.

RISK PREMIUM ANALYSIS

11   Q.   **Please describe your use of the Risk Premium approach to determine the cost of**

12   **equity.**

13   A.   The details of my use of the Risk Premium approach and the evidence in support of my

14   conclusions are set forth in Appendix H. I will summarize them here. With this method,

15   the cost of equity capital is determined by corporate bond yields plus a premium to

16   account for the fact that common equity is exposed to greater investment risk than debt

17   capital.

18   Q.   **What long-term public utility debt cost rate did you use in your risk premium**

19   **analysis?**

20   A.   In my opinion, a 6.25% yield represents a reasonable estimate of the prospective yield on

21   long-term A-rated public utility bonds. As I will subsequently show, the Moody's index

22   and the Blue Chip forecasts support this figure.

27

1   The historical yields for long-term public utility debt are shown graphically on

2   page 1 of Schedule 8. For the twelve months ended September 2006, the average monthly

3   yield on Moody's A-rated index of public utility bonds was 6.06%. For the six and three-

4   month periods ending September 2006, the yields were 6.28% and 6.19%, respectively.

5   Q.   **What factors have influenced recent interest rates?**

6   A.   The low interest rates in 2003-'04 were, in part, the product of the Federal Open Market

7   Committee ("FOMC") policy, which is now in transition. In the two year period between

8   June 2004 and June 2006, the FOMC increased the Fed Funds rate in seventeen 25 basis

9   point increments. These policy actions, which have brought the Fed Funds rate to 5.25%,

10   are widely interpreted as part of the process of moving toward a more neutral range for

11   monetary policy. Current interest rates are characterized by a relatively flat to slightly

12   inverted yield curve.

13   Q.   **What forecasts of interest rates have you considered in your analysis?**

14   A.   I have determined the prospective yield on A-rated public utility debt by using the Blue

15   Chip Financial Forecasts ("Blue Chip") along with the spread in the yields that I describe

16   above and in Appendix G. The Blue Chip is a reliable authority and contains consensus

17   forecasts of a variety of interest rates compiled from a panel of banking, brokerage, and

18   investment advisory services. In early 1999, Blue Chip stopped publishing forecasts of

19   yields on A-rated public utility bonds because the Federal Reserve deleted these yields

20   from its Statistical Release H.15. To independently project a forecast of the yields on A-

21   rated public utility bonds, I have combined the forecast yields on long-term Treasury

22   bonds published on October 1, 2006, and the yield spread of 1.00% that I describe in

1   Appendix G and Schedule 8. For comparative purposes, I have also shown the <u>Blue Chip</u>

2   of Aaa-rated and Baa-rated corporate bonds. These forecasts are:

		Blue Chip Financial Forecasts				
		Corporate		30-Year	A-rated Public Utility	
Year	Quarter	Aaa-rated	Baa-rated	Treasury	Spread	Yield
2006	Fourth	5.7%	6.6%	4.9%	1.0%	5.9%
2007	First	5.8%	6.7%	5.0%	1.0%	6.0%
2007	Second	5.9%	6.8%	5.0%	1.0%	6.0%
2007	Third	5.9%	6.8%	5.0%	1.0%	6.0%
2007	Fourth	5.9%	6.8%	5.1%	1.0%	6.1%
2008	First	6.0%	6.9%	5.1%	1.0%	6.1%

3   **Q.   Are there additional forecasts of interest rates that extend beyond those shown**

4   **above?**

5   A.   Yes. Twice yearly, <u>Blue Chip</u> provides long-term forecasts of interest rates. In its June 1,

6   2006 publication, the <u>Blue Chip</u> published forecasts of interest rates are reported to be:

	Corporate		30-Year	A-rated Public Utility	
Averages	Aaa-rated	Baa-rated	Treasury	Spread	Yield
2007-11	6.3%	7.2%	5.4%	1.0%	6.4%
2012-16	6.5%	7.3%	5.6%	1.0%	6.6%

7   Given these forecast interest rates, a 6.25% yield on A-rated public utility bonds represents

8   a reasonable expectation.

9   **Q.   What equity risk premium have you determined for public utilities?**

10 A.   Appendix H provides a discussion of the financial returns that I relied upon to develop the

11   appropriate equity risk premium for the S&P Public Utilities. I have calculated the equity

12   risk premium by comparing the market returns on utility stocks and the market returns on

13   utility bonds. I chose the S&P Public Utility index for the purpose of measuring the

14   market returns for utility stocks because it is intended to represent firms engaged in

29

1   regulated activities and today is comprised of electric companies and gas companies. The

2   S&P Public Utility index is more closely aligned with these groups than some broader

3   market indexes, such as the S&P 500 Composite index. The S&P Public Utility index is a

4   subset of the overall S&P 500 Composite index. Use of the S&P Public Utility index

5   reduces the role of judgment in establishing the risk premium for public utilities. With the

6   equity risk premiums developed for the S&P Public Utilities as a base, I derived the equity

7   risk premium for the Electric Group.

8   Q.   **What equity risk premium for the S&P Public Utilities have you determined for this**

9   **case?**

10 A.   To develop an appropriate risk premium, I analyzed the results for the S&P Public Utilities

11   by averaging (i) the midpoint of the range shown by the geometric mean and median and

12   (ii) the arithmetic mean. This procedure has been employed to provide a comprehensive

13   way of measuring the central tendency of the historical returns. As shown by the values

14   set forth on page 2 of Schedule 9, the indicated risk premiums for the various time periods

15   analyzed are 5.17% (1928-2005), 6.05% (1952-2005), 5.19% (1974-2005), and 5.20%

16   (1979-2005). The selection of the shorter periods taken from the entire historical series is

17   designed to provide a risk premium that conforms more nearly to present investment

18   fundamentals and removes some of the more distant data from the analysis.

19 Q.   **Do you have further support for the selection of the time periods used in your equity**

20   **risk premium determination?**

21 A.   Yes. First, the terminal year of my analysis presented in Schedule 9 represents the returns

22   realized through 2005. Second, the selection of the initial year of each period was based

30

1   upon the events that I described in Appendix H. These events were fixed in history and

2   cannot be manipulated as later financial data becomes available. That is to say, using the

3   Treasury-Federal Reserve Accord as a defining event, the year 1952 is fixed as the

4   beginning point for the measurement period regardless of the financial results that

5   subsequently occurred. Likewise, 1974 represented a benchmark year because it followed

6   the 1973 Arab Oil embargo. Also, the year 1979 was chosen because it began the

7   deregulation of the financial markets. As such, additional data are merely added to the

8   earlier results when they become available, clearly showing that the periods chosen were

9   not driven by any particular results of the study.

10 Q. **What conclusions have you drawn from these data?**

11 A. Using the summary values provided on page 2 of Schedule 9, the 1928-2005 period

12   provides the lowest indicated risk premium, while the 1952-2005 period provides the

13   highest risk premium for the S&P Public Utilities. Within these bounds, a common equity

14   risk premium of 5.20% (5.19% + 5.20% = 10.39% ÷ 2) is shown from data covering the

15   periods 1974-2005 and 1979-2005. Therefore, 5.20% represents a reasonable risk

16   premium for the S&P Public Utilities in this case.

17   As noted earlier in my fundamental risk analysis, differences in risk characteristics

18   must be taken into account when applying the results for the S&P Public Utilities to the

19   Electric Group. I recognized these differences in the development of the equity risk

20   premium in this case. I previously enumerated various differences in fundamentals

21   between the Electric Group and the S&P Public Utilities, including size, market ratios,

22   common equity ratio, return on book equity, operating ratios, coverage, quality of

1   earnings, internally generated funds, and betas. In my opinion, these differences indicate

2   that 5.00% represents a reasonable common equity risk premium in this case. This

3   represents approximately 96% (5.00% ÷ 5.20% = 0.96) of the risk premium of the S&P

4   Public Utilities and is reflective of the risk of the Electric Group compared to the S&P

5   Public Utilities.

6 **Q.** **What common equity cost rate would be appropriate using this equity risk premium**

7   **and the yield on long-term public utility debt?**

8 **A.** The cost of equity (i.e., "k") is represented by the sum of the prospective yield for long-

9   term public utility debt (i.e., "i") and the equity risk premium (i.e., "RP"). To that cost

10   must be added an adjustment for common stock financing costs ("flot."). The Risk

11   Premium approach provides a cost of equity of:

$$i \quad + \quad RP \quad = \quad k \quad + \quad flot. \quad = \quad K$$

Electric Group 6.25% + 5.00% = 11.25% + 0.21% = 11.46%

12   **CAPITAL ASSET PRICING MODEL**

13 **Q.** **How have you used the Capital Asset Pricing Model to measure the cost of equity in**

14   **this case?**

15 **A.** I have used the Capital Asset Pricing Model ("CAPM") in addition to my other methods.

16   As with other models of the cost of equity, the CAPM contains a variety of assumptions

17   that I discuss in Appendix I. Therefore, this method should be used with other methods to

18   measure the cost of equity, as each will complement the other and will provide a result that

19   will alleviate the unavoidable shortcomings found in each method.

20 **Q.** **What are the features of the CAPM as you have used it?**

1   A.   The CAPM uses the yield on a risk-free interest bearing obligation plus a rate of return

2   premium that is proportional to the systematic risk of an investment. The details of my

3   use of the CAPM and evidence in support of my conclusions are set forth in Appendix I.

4   To compute the cost of equity with the CAPM, three components are necessary: a risk-

5   free rate of return ("Rf"), the beta measure of systematic risk ("β"), and the market risk

6   premium ("Rm-Rf") derived from the total return on the market of equities reduced by the

7   risk-free rate of return. The CAPM specifically accounts for differences in systematic risk

8   (i.e., market risk as measured by the beta) between an individual firm or group of firms

9   and the entire market of equities. As such, to calculate the CAPM it is necessary to

10   employ firms with traded stocks. In this regard, I performed a CAPM calculation for the

11   Electric Group. In contrast, my Risk Premium approach also considers industry- and

12   company-specific factors because it is not limited to measuring just systematic risk. As a

13   consequence, the Risk Premium approach is more comprehensive than the CAPM. In

14   addition, the Risk Premium approach provides a better measure of the cost of equity

15   because it is founded upon the yields on corporate bonds rather than Treasury bonds.

16   Q.   **What betas have you considered in the CAPM?**

17   A.   For my CAPM analysis, I considered the Value Line betas. As shown on page 1 of

18   Schedule 10, the average beta is .91 for the Electric Group.

19   Q.   **What risk-free rate have you used in the CAPM?**

20   A.   For reasons explained in Appendix G, I have employed the yields on 20-year Treasury

21   bonds using both historical and forecast data to match the longer-term horizon associated

22   with the ratesetting process. As shown on pages 2 and 3 of Schedule 10, I provided the

1   historical yields on Treasury notes and bonds. For the twelve months ended September

2   2006, the average yield was 4.98%, as shown on page 3 of that schedule. For the six- and

3   three-months ended September 2006, the yields on 20-year Treasury bonds were 5.19%

4   and 5.09%, respectively. As shown on page 4 of Schedule 10, forecasts published by <u>Blue</u>

5   <u>Chip</u> on October 1, 2006 indicate that the yields on long-term Treasury bonds are expected

6   to be in the range of 4.9% to 5.1% during the next six quarters. The longer term forecasts

7   described previously show that the yields on Treasury bonds will average 5.4% from 2007

8   through 2011 and 5.6% from 2012 to 2016. For reasons explained previously, forecasts of

9   interest rates should be emphasized at this time. Hence, I have used a 5.25% risk-free rate

10 of return for CAPM purposes.

11 **Q.   What market premium have you used in the CAPM?**

12 A.   As developed in Appendix I, the market premium is developed by averaging historical

13 market performance (i.e., 6.5%) and the forecasts (i.e., 6.69%). The resulting market

14 premium is 6.60% (6.5% + 6.69% = 13.19% ÷ 2), which represents the average market

15 premium using historical and forecast data.

16 **Q.   What CAPM result have you determined using the CAPM?**

17 A.   Using the 5.25% risk-free rate of return, the beta of .91 for the Electric Group, the 6.60%

18 market premium, and the flotation cost adjustment developed previously, the following

19 result is indicated.

$$Rf \ + \ \beta \ x \ (\ Rm\text{-}Rf \ ) \ = \ k \ + \ flot. \ = \ K$$

Electric Group   5.25% + 0.91 x (6.60%) = 11.26% + 0.21% = 11.47%

1 <u>COMPARABLE EARNINGS APPROACH</u>

2 **Q. How have you applied the Comparable Earnings approach in this case?**

3 A. The technical aspects of my Comparable Earnings approach are set forth in Appendix J.

4 In order to identify the appropriate return on equity for a public utility, it is necessary to

5 analyze returns experienced by other firms within the context of the Comparable Earnings

6 standard. The firms selected for the Comparable Earnings approach should be companies

7 whose prices are not subject to cost-based price ceilings (i.e., non-regulated firms) so that

8 circularity is avoided. To avoid circularity, it is essential that returns achieved under

9 regulation not provide the basis for a regulated return. Because regulated firms must

10 compete with non-regulated firms in the capital markets, it is appropriate to view the

11 returns experienced by firms which operate in competitive markets. One must keep in

12 mind that the rates of return for non-regulated firms represent results on book value

13 actually achieved, or expected to be achieved, because the starting point of the calculation

14 is the actual experience of companies that are not subject to rate regulation. The United

15 States Supreme Court has held that:

16 A public utility is entitled to such rates as will permit it to earn a
17 return on the value of the property which it employs for the
18 convenience of the public equal to that generally being made at the
19 same time and in the same general part of the country on
20 investments in other business undertakings which are attended by
21 corresponding risks and uncertainties.... The return should be
22 reasonably sufficient to assure confidence in the financial soundness
23 of the utility and should be adequate, under efficient and
24 economical management, to maintain and support its credit and
25 enable it to raise the money necessary for the proper discharge of its
26 public duties. <u>Bluefield Water Works vs. Public Service</u>
27 <u>Commission, 262 U.S. 668 (1923)</u>.
28
29 Therefore, it is important to identify the returns earned by firms that compete for

1 capital with a public utility. This can be accomplished by analyzing the returns of non-

2 regulated firms that are subject to the competitive forces of the marketplace.

3   There are two avenues available to implement the Comparable Earnings approach.

4 One method would involve the selection of another industry (or industries) with

5 comparable risks to the public utility in question, and the results for all companies within

6 that industry would serve as a benchmark. The second approach requires the selection of

7 parameters that represent similar risk traits for the public utility and the comparable risk

8 companies. Using this approach, the business lines of the comparable companies become

9 unimportant. The latter approach is preferable with the further qualification that the

10 comparable risk companies exclude regulated firms. As such, this approach to

11 Comparable Earnings avoids the circular reasoning implicit in the use of the achieved

12 earnings/book ratios of other regulated firms. Rather, it provides an indication of an

13 earnings rate derived from non-regulated companies that are subject to competition in the

14 marketplace and not rate regulation. Since regulation is a substitute for competitively-

15 determined prices, the returns realized by non-regulated firms with comparable risks to a

16 public utility provide useful insight into a fair rate of return. This is because returns

17 realized by non-regulated firms have become increasingly relevant in the context of a

18 market that provides more investment alternatives. Moreover, the rate of return for a

19 regulated public utility must be competitive with returns available on investments in other

20 enterprises having corresponding risks, especially in a more global economy.

21   To identify the comparable risk companies, the Value Line Investment Survey for

22 Windows was used to screen for firms of comparable risks. The Value Line Investment

1   Survey for Windows includes data on approximately 1700 firms. Excluded from the

2   selection process were companies incorporated in foreign countries and master limited

3   partnerships (MLPs).

4 Q. **How have you implemented the Comparable Earnings approach?**

5 A. In order to implement the Comparable Earnings approach, non-regulated companies were

6   selected from the Value Line Investment Survey for Windows that have six categories (see

7   Appendix J for definitions) of comparability designed to reflect the risk of the Electric

8   Group. These screening criteria were based upon the range as defined by the rankings of

9   the companies in the Electric Group. The items considered were: Timeliness Rank,

10   Safety Rank, Financial Strength, Price Stability, Value Line betas, and Technical Rank.

11   The specific companies comprising the Comparable Earnings group and their associated

12   rankings within the ranges are identified on page 1 of Schedule 11.

13   Value Line data was relied upon because it provides a comprehensive basis for

14   evaluating the risks of the comparable firms. As to the returns calculated by Value Line

15   for these companies, there is some downward bias in the figures shown on page 2 of

16   Schedule 11 because Value Line computes the returns on year-end rather than average

17   book value. If average book values had been employed, the rates of return would have

18   been slightly higher. Nevertheless, these are the returns considered by investors when

19   taking positions in these stocks. Finally, because many of the comparability factors, as

20   well as the published returns, are used by investors for selecting stocks, and to the extent

21   that investors rely on the Value Line service to gauge their returns, it is, therefore, an

22   appropriate database for measuring comparable return opportunities.

1   **Q. What data have you used in your Comparable Earnings analysis?**

2   A.   I have used both historical realized returns and forecast returns for non-utility companies.

3   As noted previously, I have not used returns for utility companies so as to avoid the

4   circularity that arises from using regulatory influenced returns to determine a regulated

5   return.   It is appropriate to consider a relatively long measurement period in the

6   Comparable Earnings approach in order to cover conditions over an entire business cycle.

7   A ten-year period (5 historical years and 5 projected years) is sufficient to cover an

8   average business cycle.   Unlike the DCF and CAPM, the results of the Comparable

9   Earnings method can be applied directly to the book value capitalization because the

10   nature of the analysis relates to book value.   Hence, Comparable Earnings does not contain

11   the potential misspecification contained in market models when the market capitalization

12   and book value capitalization diverge significantly.   The historical rate of return on book

13   common equity was 14.1% using the median value as shown on page 2 of Schedule 11.

14   The forecast rates of return as published by Value Line are shown by the 14.5% median

15   values also provided on page 2 of Schedule 11.

16   **Q. What rate of return on common equity have you determined in this case using the**

17   **Comparable Earnings approach?**

18   A.   The average of the historical and forecast median rates of return is:

	Historical	*Forecast*	*Average*
Comparable Earnings Group	14.10%	14.50%	14.30%

1   CONCLUSION

2   Q.   What is your conclusion concerning the cost of equity for the Electric Group?

3   A.   Based upon the application of a variety of methods and models described previously, it is

4   my opinion that the cost of equity is 12.02%. It is essential that the Commission employ a

5   variety of techniques to measure the Company's cost of equity because of the limitations

6   and infirmities that are inherent in each method. Indeed, my studies indicate that the cost

7   of equity for the Electric Group is 12.02%, and is represented by the average of each of the

8   methods/models that I previously discussed (i.e., 10.85% + 11.46% + 11.47% + 14.30% =

9   48.08% ÷ 4 = 12.02%).

10 Q.   Are adjustments to the Electric Group's results necessary to arrive at a cost of equity

11   for Lockhart?

12 A.   Yes. I made two adjustments in this regard.

13 Q.   How is the 12.02% cost of equity for the Electric Group adjusted for Lockhart's

14   100% common equity?

15 A.   In pioneering work, Nobel laureates Modigliani and Miller developed several theories

16   about the role of leverage in a firm's capital structure. As part of that work, Modigliani

17   and Miller established that as the borrowing of a firm increases, the expected return on

18   stockholders' equity also increases. Likewise, the return on equity decreases when the

19   financial leverage of a firm decreases. This principle is incorporated into the adjustment

20   to the cost of equity for the Electric Group, and recognizes that the expected return on

21   equity decreases when it is to be applied to 100% common equity.

1   Q.   **How can the Modigliani and Miller theory be applied to calculate the rate of return**

2   **on common equity with 100% common equity?**

3   A.   First it is necessary to calculate the capital structure ratios for the Electric Group based

4   upon the market value of their capitalization. By taking the "Fair Value of Financial

5   Instruments" (Disclosures about Fair Value of Financial Instruments -- Statement of

6   Financial Accounting Standards ("FAS") No. 107) shown in the annual report for these

7   companies and the market value of the common equity using the price of stock, the capital

8   structure ratios calculated from the market value of their securities are:

| | Capitalization at Market Value |
Electric Group	(Fair Value)
Long-term Debt	41.22%
Preferred Stock	0.75
Common Equity	58.03
Total	100.00%

18   With the capital ratios calculated above, the cost of equity for a firm without any

19   leverage can be calculated. The cost of equity for an unleveraged firm using the capital

20   structure ratios calculated with market values is:

21            $ku = ke - (((ku - i) \; 1\text{-}t) \; D \; / \; E) - (ku - d) \; P \; / \; E$

22            $10.17\% = 12.02\% - (((10.17\%\text{-}6.28\%) \; .65) \; 41.22\%/58.03\%) - (10.17\% - 6.28\%) \; 0.75\%/58.03\%$

23   where ku = cost of equity for an all-equity firm, ke = market determined cost equity, i =

24   cost of debt[6], d = dividend rate on preferred stock [7], D = debt ratio, P = preferred stock

25   ratio, and E = common equity ratio. The formula shown above indicates that the cost of

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[6]   The cost of debt is the six-month average yield on Moody's A rated public utility bonds.

[7]   The cost of preferred is the six-month average yield on Moody's "a" rated preferred stock.

1   equity for a firm with 100% equity is 10.17% using the market value of the Electric

2   Group's capitalization.

3   Q.   **After adjustment for 100% common equity, would a 10.17% rate of return on**

4   **common equity be adequate for Lockhart?**

5   A.   No. As the size of a firm decreases, its risk, and hence its required return increases. In his

6   discussion of the cost of capital, Professor Brigham has indicated that smaller firms have

7   higher capital costs than otherwise similar larger firms (see Fundamentals of Financial

8   Management, fifth edition, page 623). Also, the Fama/French study (see "The Cross-

9   Section of Expected Stock Returns"; The Journal of Finance, June 1992) established that

10   the size of a firm helps explain stock returns. In an October 15, 1995 article in Public

11   Utility Fortnightly, entitled Equity and the Small-Stock Effect, by Michael Annin, it was

12   demonstrated that the CAPM would understate the cost of equity significantly according to

13   a company's size.

14   Q.   **How should the very small size of Lockhart be recognized in its equity return?**

15   A.   The 2006 SBBI Yearbook provides size premiums for mid-cap, low-cap, and micro-cap

16   portfolios based upon returns in excess of the CAPM. The Electric Group has an average

17   market capitalization of its equity of $15.963 billion, which would place it in the second

18   decile according to the size of the companies traded on the NYSE, AMEX and NASDAQ.

19   Therefore, the Electric Group represents a large-cap portfolio. Lockhart, however, has

20   only $18 million of common equity which would place it in the smallest (i.e., the tenth)

21   decile according to the 2006 SBBI Yearbook.

1   According to the 2006 <u>SBBI</u> Yearbook, the respective size premiums are 1.02% for

2   mid-cap companies, 1.81% for low-cap companies, and 3.95% for micro-cap companies.

3   Since the Company qualifies for the highest size adjustment attributed to companies in

4   the micro-cap group, the 3.95% size premium would produce a 14.12% (10.17% +

5   3.95%) rate of return on common equity. However, I have taken a conservative

6   approach by adding just 1.81% to the Company's rate of return on common equity,

7   corresponding to the more modest low-cap size premium. Hence, the 10.17% rate of

8   return on common equity that is related to 100% common equity would become 11.98%

9   (10.17% + 1.81%), which only partially reflects the small size of Lockhart.

10 **Q.**   **Please summarize your recommendation concerning the appropriate rate of return**

11   **on common equity for the Company.**

12 A.   Given the Company's risk traits enumerated earlier, its 100% common equity ratio, and

13   its extremely small size, a 12.00% rate of return on common equity prior to the

14   performance-based adjustment is reasonable for Lockhart. As Mr. Stone's testimony

15   describes, the Company has proposed a performance-based adjustment to the cost of

16   equity which will provide an incentive that will encourage the Company to continue to

17   undertake projects that benefit its customers. Incentive-based regulation has received

18   increased attention in recent years, and the Company's proposal fits that inclination.

19 **Q.**   **Does this conclude your prepared direct testimony?**

20 A.   Yes.